

## ABSTRACT OF THE DISCLOSURE

**[0058]** An optical density sensor disposed over a target surface in an image formation apparatus comprises an integrating cavity having a diffuse, reflective interior surface and a view port formed therein. An optical source directs light through the view port onto the target surface, without striking any interior surface of the cavity. Light reflected from the target surface is detected by an optical detector disposed within the cavity. The optical source may be disposed in a collimator, which may extend into the interior of the cavity, and may include a lens. A circuit card which may include an optical detector sensing circuit may be disposed proximate the optical detector. A compensating slot formed in the cavity may allow some reflected light to directly impact the optical detector as the gap between the cavity and the target surface increases.